

IN THE CLAIMS:

This listing of claims will replace all prior versions, and listings, of claims in the application:

Claim 1 (currently amended): A method of screening for possible ~~solid~~ ^{crystal} forms of ^{a polymorph} [a sample] an organic compound, said method comprising the steps of: disposing ^{polymorph} a non-solid [the] sample of the organic compound in one or more receptacles, where at least one of the receptacles defines a capillary space, and the sample is disposed within the capillary space;

^{polymorph} solidifying the sample in or on said receptacles to generate at least one ^{polymorph} solid form;

analyzing said at least one solid form ^{its crystalline forms} ~~in a manner wherein the analytical result is] by any suitable analysis generating analytical results~~ ^{analytical methods selected from the group consisting of visual analysis, microscopic analysis, thermal analysis, diffraction analysis, and spectroscopic analysis} indicative of [the generated] solid form; and classifying said ~~at least one solid form~~ ^{crystalline} according to the analytical results.

Claim 2 (original): The method of claim 1 wherein the sample consists essentially of a solution of one compound.

Claim 3 (original): The method of claim 1 wherein the sample comprises a mixture of compounds.

Claim 4 (original): The method of claim 1 wherein the sample is disposed on a plurality of receptacles, including at least two different types of receptacles.

Claim 5 (original): The method of claim 4 wherein said at least one receptacle includes a receptacle that do not define a capillary space.

Claim 6 (original): The method of claim 1 wherein the sample is placed in at least five receptacles defining capillary spaces.

Claim 7 (original): The method of claim 1 wherein the compound is placed in at least 100 receptacles defining capillary spaces.

Claim 8 (original): The method of claim 1 wherein the solidifying step comprises crystallizing the sample.

Claim 9 (original): The method of claim 1 wherein the solidifying step is selected from the group consisting of solvent evaporation, cooling, heating, anti-solvent addition, gel diffusion, and thin-layer deposition.

Claim 10 (original): The method of claim 1, further comprising the step of forming a supersaturated solution of the sample.

Claim 11 (currently amended): The method of claim 1 wherein the disposing [placing] step comprises placing the sample into at least one capillary tube.

¹⁷
Claim ~~12~~ (previously amended): The method of claim 1 wherein the disposing step comprises placing the sample into a receptacle selected from the group consisting of a well plate, a block with holes or pores and a sheet with holes or pores.

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Claim ~~13~~ (original): The method of claim 1, wherein the analyzing step comprises a method selected from the group consisting of visual analysis, microscopic analysis, thermal analysis, diffraction analysis, and spectroscopic analysis.

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Claim ~~14~~¹⁹ (original): The method of claim ~~13~~¹⁸, wherein the diffraction analysis is x-ray diffraction analysis.

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Claim ~~15~~²⁰ (original): The method of claim ~~13~~¹⁸, wherein the analyzing step comprises analyzing said form by X-ray diffraction analysis using synchrotron radiation as the radiation source for said analysis.

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Claim ~~16~~²¹ (original): The method of claim ~~13~~¹⁸, wherein the step of analyzing said form comprises Raman spectroscopic analysis.

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Claim ~~17~~²² (original): The method of claim 1, wherein the step of analyzing said form comprises analyzing said form without removing it from said receptacle.

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Claim ~~18~~¹² (original): The method of claim 11, wherein the step of analyzing said form comprises analyzing said form without removing it from said capillary tubes.

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Claim ~~19~~¹³ (original): The method of claim ~~18~~¹² wherein the analyzing step comprises analyzing said form by X-ray diffraction analysis using synchrotron radiation as the radiation source for said analysis.

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Claim ~~20~~²⁴ (original): The method of claim 1, further comprising the step of comparing the generated form to a known form.

²⁵
Claim ~~21~~²⁵ (currently amended): The method of claim 1 wherein said [generating] solidifying step produces at least one form of the sample that is different than a known form of the sample.

²⁶
Claim ~~22~~²⁶ (original): The method of claim 1 wherein said receptacle is subjected to substantially constant motion during said generating step.

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Claim ~~23~~ (original): The method of claim 1 wherein said receptacle is rotated along its longitudinal axis during said generating step.

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Claim ~~24~~ (original): The method of claim 1 wherein said receptacle is subject to centrifuging during said generating step.

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Claim ~~25~~ (original): The method of claim ~~24~~ wherein said centrifuging is sufficient to concentrate the solid or semisolid at one end of a capillary space.

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Claim ~~26~~ (previously amended): The method of claim ~~24~~ wherein said centrifuging is sufficient to concentrate the generated form in one end of the capillary space.

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Claim ~~27~~ (previously amended): The method of claim ~~24~~ wherein two or more samples are centrifuged at different speeds or for different lengths of time.

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Claim ~~28~~ (original): The method of claim ~~24~~ wherein said centrifuging is sufficient to move the sample to the bottom of said receptacle when one end of said receptacle is closed.

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Claim ~~29~~ (original): The method of claim 1 wherein said receptacle is subject to centrifugal evaporation during said generating step.

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Claim ~~30~~ (original): The method of claim ~~29~~ wherein said centrifugal evaporation is sufficient to concentrate the solid or semisolid at one end of a capillary space.

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Claim ~~31~~ (original): The method of claim ~~29~~ wherein said centrifugal evaporation is sufficient to facilitate in-situ analysis.

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Claim ~~32~~ (original): The method of claim ³³~~29~~ wherein said centrifugal evaporation is sufficient to provide environmental variation.

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Claim ~~33~~ (original): The method of claim ³³~~29~~ wherein said centrifugal evaporation is sufficient to move the sample to the bottom of said receptacle when one end of said receptacle is closed.

Claim 34: Previously cancelled.

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Claim ~~35~~ (previously amended): The method of claim 1, further comprising the step of determining whether more than one solid form was generated from said sample.

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Claim ~~36~~ (amended): The method of claim ~~34~~³⁴, wherein said sample comprises a compound or mixture that has biological activity in at least one form of said compound or mixture.

Claim 37: Previously cancelled.

⁴⁰
Claim ~~38~~ (previously amended): The method of claim 1 wherein the sample comprises a known polymorphic material.

⁴¹
Claim ~~39~~ (previously amended): The method of claim 1 wherein the sample comprises at least one material that is not recognized as being polymorphic.

⁴²
Claim ~~40~~ (previously amended): The method of claim 1 wherein a plurality of samples are screened.

⁴³
Claim ~~41~~ (previously amended): The method of claim 1 wherein a second analyzing step is performed on said generated form, said second analyzing step providing data indicative of bioavailability:

Claim 42: Previously cancelled.

Claim 43: Previously cancelled.

Claim 44: Previously cancelled.

Claim 45: Previously cancelled.

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Claim ~~46~~ (previously amended): The method of claim 11, wherein the analyzing step comprises analyzing said at least one solid form by X-ray diffraction analysis using synchrotron radiation as the radiation source for said analysis:

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Claim ~~47~~ (previously amended): The method of claim 11, wherein the step of analyzing said at least one solid form comprises Raman spectroscopic analysis.

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Claim ~~48~~ (previously amended): The method of claim 11, wherein the step of analyzing said at least one solid form comprises analyzing said form without removing it from said capillary tube.

Claim 49: Previously cancelled.

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Claim ~~50~~ (previously amended): The method of claim 1, wherein said classifying step comprises classifying each said generated solid form according to its x-ray diffraction pattern.

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Claim ~~51~~ (previously amended): The method of claim 1, further comprising subjecting a plurality of samples to the screening method, wherein at least two different samples are subjected to different conditions during the solidifying step.

⁴⁶
Claim ~~52~~ (previously amended): The method of claim 1, comprising the step of dividing the sample into a plurality of sample portions, and subjecting said plurality of sample portions to the screening method, wherein at least two different portions are subjected to different conditions during the solidifying step.

⁴⁹
Claim ~~53~~ (currently amended): A method of screening [a sample] an organic compound, said screening method comprising the steps of:

disposing a non-solid [the] sample of the organic compound in [on] a plurality of capillary tubes [to generate solids];

centrifuging the plurality of capillary tubes;

solidifying the sample in the capillary tubes;

analyzing the solids [in a manner wherein the analytical result is] by any suitable analysis generating analytical results indicative of [the generated] solid form [of the solids]; and

classifying [each of the solids according to the solid form of the solids] the solids by solid form according to the analytical results.

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Claim ~~54~~ (previously amended): The method of claim ~~53~~, wherein at least part of said centrifuging step occurs during said solidifying step.

⁵¹ ⁴⁹
Claim ~~55~~ (original): The method of claim ~~53~~, wherein said centrifuging step is performed at a pressure lower than ambient pressure.

⁵² ⁴⁹
Claim ~~56~~ (original): The method of claim ~~53~~, wherein said centrifuging step is performed under vacuum.

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Claim ~~57~~ (currently amended): A method of screening [a sample] an organic compound according to its solid form, said screening method comprising the steps of:

disposing [the] a non-solid sample of the organic compound on a plurality of receptacles, where at least one of the receptacles defines a capillary space, and the sample is disposed in the capillary space;

generating at least one semisolid from the sample in or on said receptacles;

analyzing the generated semisolid [wherein the analytical result is] by any suitable analysis providing analytical results indicative of the form of the semisolid; and

classifying the generated semisolid [according to the indicated] by form according to the analytical results.

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Claim ~~58~~ (currently amended): A method of screening [a sample] an organic compound, said screening method comprising the steps of:

disposing [the] a non-solid sample of the organic compound on a well plate, wherein said well plate defines a plurality of capillary spaces, and the sample is disposed in the capillary spaces;

solidifying the samples in said capillary spaces to generate solids;

analyzing the generated solids [wherein the analytical result is] by any suitable analysis generating analytical results indicative of the solid form of the generated solids; and

classifying the generated solids [according to the indicated] by solid form according to the analytical results.

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Claim ~~59~~ (previously added): The method of claim ~~58~~, wherein the step of analyzing the generated solids comprises analyzing without removing the generated solids from the receptacle in which the solids were generated.

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Claim ~~60~~ (previously added): The method of claim ~~59~~, wherein the analyzing step comprises x-ray diffraction analysis:

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Claim ~~61~~ (previously added): The method of claim ~~60~~⁵⁸, wherein the analyzing step comprises analyzing said generated solids by X-ray diffraction analysis using synchrotron radiation as the radiation source for said analysis.

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Claim ~~62~~ (previously added): The method of claim ~~58~~⁵⁶, wherein at least some of said capillary spaces are from about 0.1 mm to about 30 mm.

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Claim ~~63~~ (previously added): The method of claim ~~58~~⁵⁶ wherein at least some of said capillary spaces are from about 0.5 mm to about 17 mm.

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Claim ~~64~~ (previously added): The method of claim ~~58~~⁵⁶ wherein at least some of said capillary spaces are from about 0.5 mm to about 7 mm.

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Claim ~~65~~ (previously added): The method of claim ~~58~~⁵⁶, wherein at least some of said capillary spaces are from about 0.5 mm to about 5 mm.

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Claim ~~66~~ (previously added): The method of claim ~~58~~⁵⁶, wherein at least some of said capillary spaces are from about 0.5 mm to about 2.5 mm.

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Claim ~~67~~ (currently amended): A method of generating and detecting possible solid forms of an organic compound, said method comprising the steps of:

generating a melt from a sample comprising the organic compound [, element, or mixture;] [disposing the melt on] in one or more receptacles defining a capillary space, and the melt is disposed in the capillary space;

solidifying the melt to generate at least one solid in or on said receptacles;

analyzing said at least one generated solid [in a manner wherein the analytical result is] by any suitable analysis generating analytical results indicative of [the] solid form [of the generated solid].

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Claim ~~68~~⁶⁷ (currently amended): The method of claim [64] ~~67~~⁶⁶, wherein the compound, element or mixture thereof is free of a solvent.

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Claim ~~69~~⁷⁰ (currently amended): A method of generating and detecting possible solid forms of an organic compound, said method comprising the steps of:

melting a sample comprising the organic compound to form a melt [;]
[disposing the melt on] in one or more receptacles defining a capillary space,
wherein the melt is disposed in the capillary space;

forming a crystalline material from the melt in or on said receptacles;

analyzing said crystalline material [in a manner wherein the analytical result is] by any suitable analysis generating analytical results indicative of [the] solid form [of the crystalline material].

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Claim ~~70~~⁷¹ (currently amended): The method of claim [64] ~~69~~⁷⁰, wherein the melt is free of a solvent.

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Claim ~~71~~⁶⁰ (previously added): The method of claim ~~60~~⁵⁸ wherein the analyzing step comprises transmission x-ray diffraction analysis.

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Claim ~~72~~²⁰ (previously added): The method of claim ~~14~~¹⁹ wherein the analyzing step comprises transmission x-ray diffraction analysis.

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Claim ~~73~~⁴⁷ (previously added): The method of claim 1 wherein said at least one receptacle that defines said capillary space is made of polymer or glass.

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Claim ~~74~~⁵⁴ (previously added): The method of claim ~~57~~⁵³ wherein said at least one receptacle that defines said capillary space is made of polymer or glass:

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Claim ~~75~~⁶⁸ (currently amended): The method of claim [64] ~~67~~⁶⁶ wherein said one or more receptacles defining said capillary space is made of polymer or glass.

⁷²
Claim ~~76~~ (currently amended): The method of claim [66] ⁷⁰~~69~~ wherein said one or more receptacles defining said capillary space is made of polymer or glass.

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Claim ~~77~~ (previously added): The method of claim 1 wherein said one or more receptacles comprises a well plate.

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Claim ~~78~~ (previously added): The method of claim ⁵³~~57~~ wherein said plurality of receptacles comprises a well plate.

⁶⁹
Claim ~~79~~ (currently amended): The method of claim [64] ⁶⁶~~67~~ wherein said one or more receptacles comprises a well plate.

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Claim ~~80~~ (currently amended): The method of claim [66] ⁷⁰~~69~~ wherein said one or more receptacles comprises is a well plate.